GolfSwitch

Concurrent Processing of Tee Time Requests
GolfSwitch Application VS Hunt, Germain and Arnold

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EXHIBIT A

1. GolfSwitch Patent Application Statements on Concurrent Processing

Before we begin looking at the prior art statements of Hunt, Germain and Arnold, we must first understand what the GolfSwitch patent application states regarding concurrent processing. This section will clearly show how the GolfSwitch Patent application clearly states the intention and the method for providing concurrent (simultaneous) seamless reservation transactions with a plurality of disparate individual golf course reservation systems situated in different locations from a single user interface module.

1.1 GolfSwitch Patent Application on the Intent of Concurrent Processing within the Invention

1.1.1 The first mention of this capability can be found within the GolfSwitch patent application on the first page within the second (2nd) sentence which reads the following:

In general, this invention relates to a seamless reservation network and more specifically, to a seamless user/service reservation network enabling ***multiple user interfaces to concurrently access multiple vendor reservation systems running different software reservation platforms.***

1.1.2 Also found within the "Summary of the Invention" section on page 4 paragraph 2, 3rd sentence which reads the following:

It is yet another object of the present invention to provide a seamless user/service reservation network that ***allows the user to issue multiple concurrent transactions to multiple vendor reservation systems within a single communication.***

1.2 GolfSwitch Patent Application on the Method of Implementing Concurrency

1.2.1 The first mention of the method on which concurrency is achieved can be found on page 5, 3rd paragraph, 2nd and 4th sentences which read the following respectively:

Utilizing a multi-threaded process input means, ***the interface module processes multiple user transactions bundled into a single communication and concurrently divides and processes each transaction.***

Because of the multi-thread, multiple server configuration, ***the interface module facilitates concurrent processing of all bundled communications.***

1.2.2 Page 10, 1st paragraph, 3rd sentence which reads:

As is common with all input applications of the input module, the dedicated function application 18 allows ***for concurrent processing of multiple transactions*** *and does not vary the communications sent to the other module.*

1.2.3 Page 10, 2nd paragraph, 2nd sentence which reads:

Accordingly, the use of bundled transactions to a system using multi-threaded technology allows ***for true concurrent processing of system requests*** *from either the user input module or the vendor service module.*

After reading both sections 1.1 and 1.2 of this document, it should be clear that the GolfSwitch patent application provides for concurrent (simultaneous) processing of a plurality of reservation transactions against a plurality of different golf courses located at different locations from a single user input module.

Please refer to the following section 1.3 of this document for a discussion on the definition and meaning of multi-threaded technology.

1.3 Multi-Thread Technology

GolfSwitch Patent Application, page 10, paragraph 3 reads the following:

As would be understood by someone skilled in the relevant art, multi-thread processing technologies allows a processor to divide allotted CPU time into multiple sub-processes that are processed within one clock cycle. By bundling each request as sub-processes within a larger process, ***a CPU would be allowed to process multiple booking, shopping, maintenance or internal processes within one clock cycle*** *as opposed to having process an individual request or communication in multiple clock cycles. Depending on the number of processors bundled within a single communication, this would reduce the processing time by a linear factor. Because of the multiple thread technology, an end user or vendor can bundle requests and have these requests within each bundle processed immediately and more efficiently by the system.*

The use of Multi-Thread technology allows the GolfSwitch technology to truly concurrently (simultaneously) process a plurality of reservation transactions to a plurality of disparate individual golf course reservation systems situated in different locations. This is clearly distinct over the prior art.

2. Concurrency Not Supported in Germain Prior Art

This section will show how the Germain prior art does not support concurrent processing as described within the GolfSwitch patent application.

2.1 Germain Teaches a Sequential (non-concurrent) Reservation Transaction Methodology

Below is figure 8 depicting the one golf course at a time sequential processing methodology found within the Germain Patent:

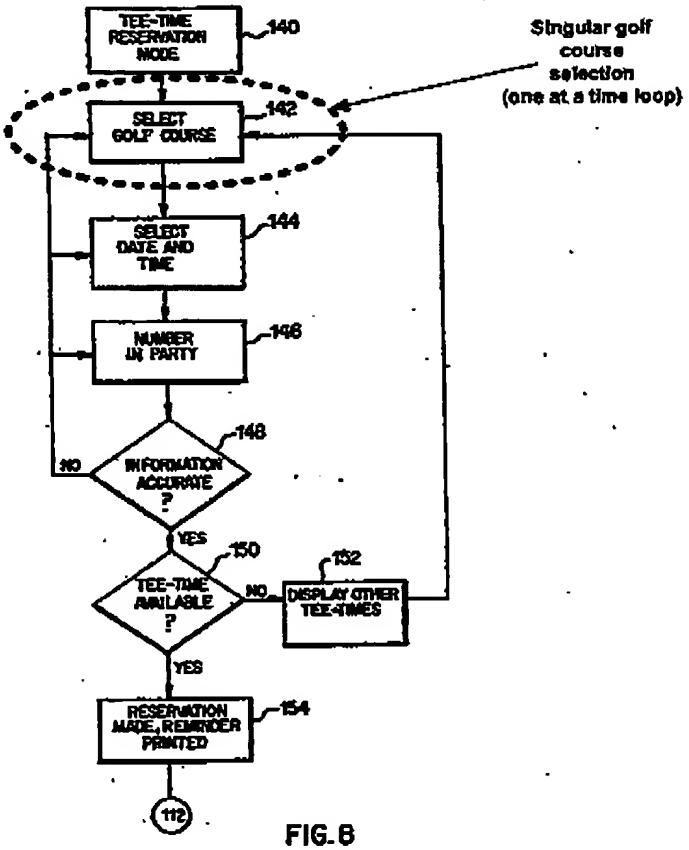


FIG. 8

2.1.1 Singular Golf Course at a Time

Please note the singular term "select golf course" found within box # 142. This represents a sequential process going to one specific golf course at a time. If a tee time is not found at that one specific golf course in box # 150 then the sequential process is started over again with box #142 to select another golf course.

Example using the Germain Patent diagram Fig. 8:

30 golf courses where queried for tee time availability in the city of Las Vegas in which the first 29 golf courses did not have any available tee times and all responded in 4 seconds with the final golf course having tee time availability and taking 8 seconds to respond. Since the Germain patent calls for a sequential one golf course at a time search the total time of this process would be calculated as follows:

Germain: (29 * 4 seconds) + 8 seconds = **124 total processing seconds**

2.1.2 **Contrast** the Sequential Germain approach to the concurrent GolfSwitch approach

Using the same example as 2.1.1 above in which 30 golf courses where queried for tee time availability in the city of Las Vegas in which 29 golf courses did not have any available tee times and all responded in 4 seconds with the final (30^{th}) golf course having available tee times and taking 8 seconds to respond.

The GolfSwitch User Input module bundles one single communication that includes a request for tee time availability for each of the 30 golf courses in Las Vegas (GolfSwitch page 5, 3^{rd} paragraph, 2^{nd} and 4^{th} sentences).

- This single communication bundle is transmitted to the Central GolfSwitch System,
- the communication is then un-bundled where each 30 tee time availability requests is handled by a different processing thread so that they all can be processed within the same CPU clock cycle (Concurrent Multi-Thread Processing - refer to GolfSwitch Patent page 10, paragraph 3).
- Each thread transmits the electronic tee time availability request message to the specific golf course concurrently (simultaneously).
- Each thread receives its independent response from the specific golf course transaction it is serving.
- All responses are bundled into a single reply communication back to the user input module.

In this example, all 29 golf courses who did not have any available tee times responded within the same 4 second time window with the last responding golf course taking 8 seconds to respond with available tee times.

GolfSwitch: The total time for this Las Vegas search is a total of **8 seconds.**

By utilizing the **concurrent multi-threaded** GolfSwitch approach, all golf courses residing within an entire city can be queried for tee time availability providing for response times that are within useable limits (**8 seconds**). The **severe latency** involved with implementing the **sequential approach** of the **Germain patent** would not be commercially feasible (**124 seconds**).

2.2 References within the Germain Prior Art Clearly Stating Sequential Processing

- Germain(Fig. 8 one course at a time loop from box 142, 150 and 152).
- Germain(Col 12, ln 22 – 54)

3. Examiner Claim Rejection Rebuttals

3.1 Claim Rejection #6

Claim Rejection #6 is very extensive and makes many claims. This section will show that Germain does **not** teach the following:

- **Concurrent** access from a single user input module.
- Access to a **plurality of disparate** individual golf course reservation systems.
- Access to reservation systems situated in **different locations**

In order to understand the GolfSwitch position relative to the examiner's statements we will brake down this claim rejection into multiple sub-sections which will include the GolfSwitch rebuttal to that sub-section at the point where a reference to prior art is made.

3.1.1 Sub-section 1: Reference (Germain figure 2 Col. 5 Ln. 9 – 41)

GolfSwitch Findings: Examiner's statements of the Germain prior art teaching **concurrent** access to **disparate golf course reservation systems** can **not** be substantiated by the referenced prior art.

Definition of **Disparate** according to Merriam-Webster:
1 : containing or made up of fundamentally different and often incongruous elements
2 : markedly distinct in quality or character
synonym see DIFFERENT

Examiner Wrote:
As to claim 109, Germain teaches Golf tee-time reservation apparatus for implementing access concurrently to a plurality of disparate individual golf course reservation systems situated in different locations, (figure 2 Col. 5 Ln. 9 – 41)

Germain Patent References:

Germain Figure 2

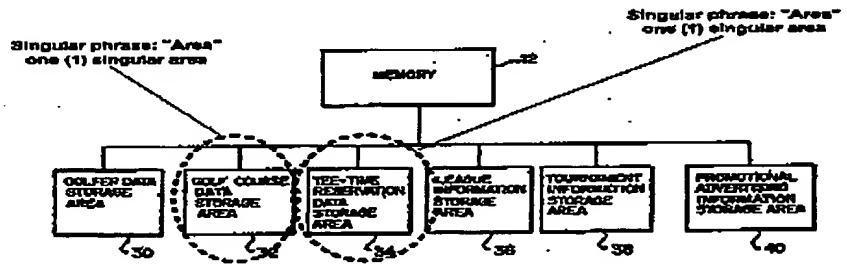


FIG. 2

Germain Col. 5 Ln. 9 – 41

Singular "Area" One (1) area

As seen in Fig. 2, memory 12 includes a plurality of storage areas including a golfer data storage area 30, a golf course data storage area 32, a tee-time reservation data storage area 34, a league data storage area 36, a tournament data storage area 38, and a promotional ad data storage area 40. Golfer data storage area 30 can include a separate storage area for each golfer using the system. A variety of information can be stored for each golfer in golfer data storage area 30 including name, address, telephone number, social security number, handicap, golf club memberships, default options previously selected by the golfer, tee-time reservation information, statistical data on previous rounds of golf played, financial account information, tournament and league memberships and associated rounds of golf played an any other pertinent information. When a golfer uses the system, the system can easily access all of the information stored in that golfer's separate storage file.

One (1) single centralized reservation system.

NOT Individual Disparate reservation systems

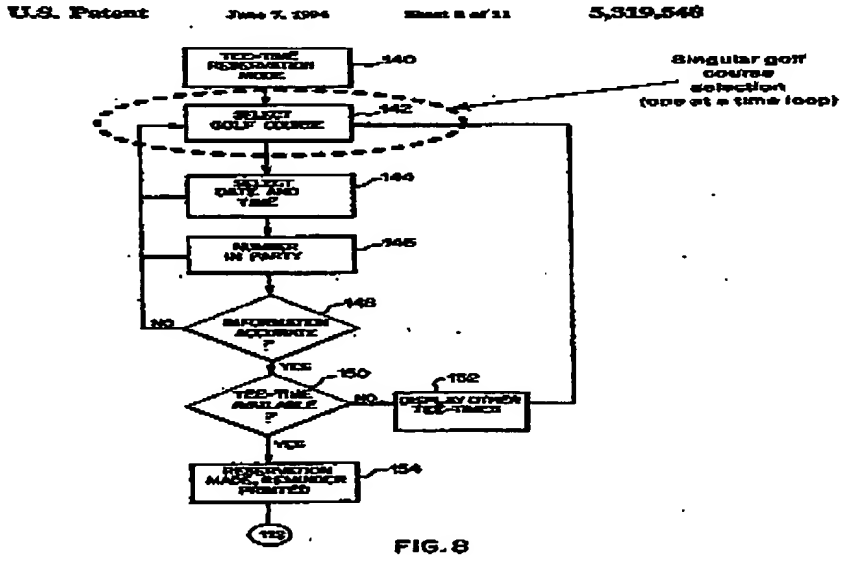
Singular "Area" One (1) area

Tee-time reservation data storage area 34 includes information on tee-time reservations for every golf course using the system. Thus, tee-time storage area 34 can be **a central database for storing tee-time reservations for courses all over the United States and world**. The information stored for each tee-time reservation on each course includes a data, a time, number of people in a golfing party, names of the golfing party members, any special requests or needs of the golfing party such as a need for left handed clubs or a lesson from a golf course professional prior to teeing off, a phone number where at least one member of the golfing party can be reached an other appropriate information.

Not one mention of concurrent access to a plurality of disparate individual golf courses can be found.

Below is Figure 8 of the Germain prior art that clearly shows a singular "one at a time" golf course interaction

No Concurrent/Simultaneous Interaction



3.1.2 Sub-section 2: Reference (Germain Col. 2 Ln. 32 – 53, User Interface Module 60 Col. 7 Ln. 39 – 41)

Findings:
No argument with Examiner's finding within this sub-section

Examiner Wrote:
Said apparatus comprising: a plurality of user input modules distributed throughout a wide geographic area including at sites remote from one another ("..user interface.." Col. 2 Ln. 32 – 53, User Interface Module 60 Col. 7 Ln. 39 – 41).

Germain Patent References:
Not necessary to be included.

3.1.3 Sub-section 3: Reference (Germain Col. 2 Ln. 32 – 53, figure 6 Col. 11 Ln. 5 – 40);

Findings:
The referenced prior art does not support the examiner's statements that Germain teaches: **sending one or more tee-time requests concurrently**, or **disparate individual golf course reservation systems.**

See section 3.1.1 of this document for Webster's definition of "**disparate**"

Examiner Wrote:
Each user input module having an interface capable of **sending one or more tee-time requests concurrently** to one or more of said plurality of **disparate individual golf course reservation systems** ("...user selection..." Col. 2 Ln. 32-53, figure 6 Col. 11 Ln. 5 – 40)

Germain Patent References:

Germain: Col. 2 Ln. 32 – 53

In accordance with a broad aspect of the invention, a golf information system comprises a central processing unit having a user interface which allows the system to be accessed directly, for example, by a golfer in a golf course club house or indirectly, such as, a golfer using a remote access device. The user interface preferably includes a display device and an input device. The display device displays a user selection menu which provides a golfer with a variety of options to select a variety of system operating modes. If a golfer is not ready to play, the golfer can select one of the options for paying a transaction cost, reserving a tee time, generating a printed lesson based on previous rounds of golf played, printing or displaying a previously played round of golf, statistical analysis and information on a previous round or rounds of golf, league information, handicap, course conditions, information on other golfers and information on other golf courses. If a golfer is set to tee off soon, the golfer can select one of the options to pay for the round of golf and use of the golf information system, select how to customize the golf play recording cards and generate the customized golf play recording cards.

No text supporting the examiner's statements of "sending one or more tee-time requests concurrently" or "disparate individual golf course reservation systems" can be found within the above referenced text. Note the author's use of the singular phrase: "the system" or "the golf information system" indicating a singular system not access to disparate individual reservation systems.

Germain: Col. 11 Ln. 5 – 40

The system will prompt the golfer to input personal information including name, address, social security number, telephone number, statistical analysis to be performed for each round of golf played, keeping scores private or public, tee-time reservation instructions, and any other pertinent information, step 106. The system also prompts the golfer to input a personal identification number to be used in case the golfer does not have his identification card. The system automatically sets up a storage information area for storing the personal, golf and account information for the golfer. The system will also issue the golfer an identification card for automatic access to the system, step 108. The system will charge the new golfer's account for any set up costs and user's fees incurred in setting up the account. The golfer will have an opportunity to pay this amount and even add money to his identification/debit card if he so desires in the payment mode to be described later.

If the golfer has used the system before, the golfer only has to insert his identification card or enter his personal identification number to access the system, step 110. If a golfer does not have his identification card and cannot remember his personal identification number, the system will prompt the golfer for a password such as mother's maiden name or other personal information until the system is satisfied that a fraudulent entry into the system is not occurring. Next, a golfer enters the selection operation mode, step 112. The various modes a golfer can select include a payment mode 120, a tee-time reservation mode 140, a golf play recording card generating mode 160, a data reading mode 180, an analysis mode 200 and an exit routine 220. The flow then returns to the system operating mode selection, step 112.

A list of step-by-step modes/actions a user can select one-at-a-time through the Germain system. No wording that supports the Examiner's statement of "sending one or more tee-time requests concurrently" or "disparate individual golf course reservation systems" can be found within the above referenced text. However, the author's continued use of the singular phrase "the system" makes it clear that Germain is a single centralized reservation system design.

3.1.4 Sub-section 4: Reference (Germain Col. 7 Ln. 5-21, Col. 7 Ln. 46-48);

Findings:

The examiner's statements that Germain teaches **"concurrently receiving said one or more tee-time requests"** and that access to a **"plurality of disparate individual golf course reservation systems"** can not be supported by the referenced prior art.

- Refer to section 3.1.1 of this document for Webster's definition of "disparate"
- Refer to section 3.1.1 of this document for the Germain prior art stated design of a single centralized reservation system, not a plurality of individual golf course reservation systems as stated.

Examiner Wrote:

And an interface module having a data link with each of said user input modules for **concurrently** receiving said one or more tee-time requests to one or more of said **plurality of disparate individual golf course reservation systems** as real time transactions, said interface module having a data link connection with each of said **plurality of disparate individual golf course reservation systems** and being arranged to interface with said **plurality of individual golf course reservation systems** to effect acceptance of each of said one or more tee-time requests at said one or more **plurality of disparate individual golf course reservation systems** to which said one or more tee-time requests are directed

(Communication Port 28 Col. 7 Ln. 5-21, Communication Port Control Module 66 Col. 7 Ln. 46 – 48)

Germain Patent References:

Germain: Communication Port 28 Col. 7 Ln. 5-21

CPU 10 is also connected to a communication port 28 to allow a golfer to access the system via a remote access device such as a modem, telephone or computer located at a remote location. Communication port 28 can be used to verify credit cards, access codes, bank card authorization data and any other identification data and to allow a system user working from a personal computer to access the system. This would allow a golfer to access the system and have the system perform any one of the variety of functions while the golfer is at home or away from a main computer located preferably in a golf course club house or sports equipment store. For example, a golfer can use a phone or home computer to reserve a tee-time, generate a corrective lesson based on previous performance, review play of a round, retrieve statistics, analysis of previous rounds played and any other information stored in the system.

This section clearly indicates Germain's ability to allow remote communications into the centralized reservation system. However, there is no mention of "concurrently receiving said one or more tee-time requests". There is also no mention or phrasing that would support the examiner's statements that Germain teaches "a plurality of disparate individual golf course reservation systems". However, there is text that supports a single system: reference the author's continued use of the singular phrase "the system".

Germain: Communication Port Control Module 66 Col. 7 Ln. 46 – 48

A communications port control module 66 for controlling access of the system from any of a number of remote access devices.

This section clearly indicates Germain's ability to allow remote communications into the centralized reservation system. However, there is no mention of "concurrently receiving said one or more tee-time requests". There is also no mention or phrasing that would support the examiner's statements that Germain teaches "a plurality of disparate individual golf course reservation systems". However, there is text that supports a single system: reference the author's continued use of the singular phrase "the system".

3.1.5 Sub-section 5: Reference (Germain Col. 12 Ln. 41-54)

Findings:

The examiner's statements that Germain teaches access to a "**plurality of disparate individual golf course reservation systems**" can not be supported by the referenced prior art.

- Refer to section 3.1.1 of this document for Webster's definition of "disparate"
- Refer to section 3.1.1 of this document for the Germain prior art stated design of a single centralized reservation system, not a plurality of individual golf course reservation systems as stated.

Examiner Wrote:
And said interface module being arranged to process a plurality of tee-time requests from a single user input module to said plurality of disparate individual golf course reservation systems (Col. 12 Ln. 41-54).

Germain Patent References:

Germain: Col. 12 Ln. 41-54

If the information is correct, the system communicates with memory 12 to determine if the desired tee time is available, step 150. If the tee time is not available, the system will display a variety of other times available for that particular course and a variety of other courses available for that particular time and return to the select course step 152. The golfer can select anyone of the tee times listed in display 16 or just activate a quit key to exit the tee time reservation mode. If the desired tee time is available, the tee time reservation will be made and stored in memory 12 and printer 18 will print a reservation confirmation, step 154. The flow then returns to the system operating mode selection, step 112.

This section clearly indicates Germain's ability to allow a user to interact with the centralized reservation system. There is no mention or phrasing that would support the examiner's statements that Germain teaches "a plurality of disparate individual golf course reservation systems". However, <u>there is text that supports a single system</u>: reference the author's continued use of the singular phrase "the system".

3.2 Claim Rejection #7

Findings:
Germain teaches a single centralized reservation system that multiple golf courses can use.

"Tee-time reservation data storage area 34 includes information on tee-time reservations for every golf course using the system. Thus, tee-time storage area 34 can be a central database for storing tee-time reservations for courses all over the United States and world." (Germain: Col. 5 Ln. 29-32)

Germain does not teach access to a plurality of disparate individual golf course reservation systems situated in different locations (refer to Germain quote above and to section 5.1.1 of this document). Germain also does not teach that some of the plurality of individual golf course reservation systems as using different protocols.

Examiner Wrote:
Germain does not explicitly teach an apparatus for implementing seamless real time access to a plurality of **disparate individual golf course reservation systems** situated in **different locations** and at least some of the plurality of **individual golf course reservation systems as using different protocols**.

3.3 Claim Rejection #8

Findings:
Arnold requires that each golf course us the "Arnold" reservation software. Therefore the examiner's statement that Arnold teaches access to a plurality of disparate individual golf course reservation systems can not be supported by the references to the Arnold web-site. Since Arnold is silent to the protocol used to interact with the different golf courses who are all running the same software, it is impossible for the examiner to make the statement that Arnold teaches the use of different protocols.

Finally, the date on the Arnold web-site that is being referenced is April 20, 1998. The GolfSwitch invention dates back to the summer of 1997. Therefore, the Arnold publication was written almost one year after the GolfSwitch invention date.

Examiner Wrote:
Arnold teaches an apparatus for implementing seamless real time access to a plurality of **disparate individual golf course reservation systems** situated in different locations ("...real time..." page 1) and at least some of the plurality of individual golf course reservation systems as using different protocols ("...web..." page 1 NOTE: using multiple protocol is inherent in a web system, i.e. HTTP and SOAP).

Prior Art Reference:
Hello to all golfers. I am the Marketing Director for a company that provides online tee times. What we do is have golf courses use **our reservation software** (essentially automates the paper tee sheet). We then network the golf courses together electronically, which then enables a golfer to come to a web site and book a tee time online, in real time.

"our reservation software" clearly states the use of a common reservation system across all of the participating golf courses. No "disparate individual golf course reservation systems" as stated by the examiner.

No mention of multiple protocol support.